

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT



6734-255

Cleanup Progress Report - Winter 1998



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Cleanup Progress Report



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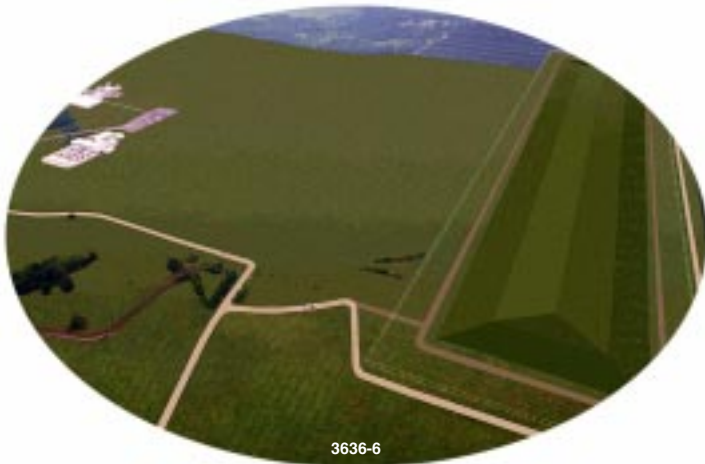


INTRODUCTION

MISSION



Together, DOE and Fluor Daniel Fernald are committed to safely restoring the Fernald site to an end state which serves the community's needs, and we will do this at an accelerated pace and in a fiscally responsible manner. Fernald's Accelerated Cleanup Plan will reduce risks, save taxpayers more than \$3 billion, and will reduce the estimated cleanup time of the Fernald site by more than 10 years.



S AFETY



Employees of the Greater Cincinnati Building and Construction Trades Council have not had a lost-time work accident since Fluor Daniel began operations at Fernald in December 1992. This achievement adds up to more than 2.28 million safe work hours for subcontractor employees.



Primary Projects

WASTE PITS REMEDIAL ACTION PROJECT



MAJOR WORK SCOPE:

- Excavation, drying, and off-site disposal by rail of six waste pits used for disposal during production.
- Fernald's waste pits range in size from a baseball diamond to a football field and vary in depth from 13 feet to 30 feet. More than 700,000 cubic yards of contaminated materials are estimated to be associated with the cleanup of the waste pits.

SOIL CHARACTERIZATION AND EXCAVATION PROJECT



MAJOR WORK SCOPE:

- Excavation of approximately 2.4 million cubic yards of soil exhibiting contaminants above established cleanup levels.
- Removal of at and below grade building foundations and associated utilities within the former production area.
- Certification that cleanup levels have been attained.
- Final restoration of the site.

ON-SITE DISPOSAL FACILITY



MAJOR WORK SCOPE:

- Design and construction of On-Site Disposal Facility. Facility design capacity of 2.5 million cubic yards.
- Disposition of contaminated soil and demolition debris into the On-Site Disposal Facility.

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FACILITIES CLOSURE AND DEMOLITION PROJECT



MAJOR WORK SCOPE:

- Safe shutdown of former production facilities. Removal of "holdup" process material, utility disconnects, and gross decontamination.
- Management and redistribution/reduction of utilities.
- Facility decontamination and dismantlement.
- Sitewide maintenance of facilities and site infrastructure.

S ILOS PROJECT



MAJOR WORK SCOPE:

- Treatment of Silos 1 & 2 waste by use of vitrification or other stabilization technology (residues left after extraction of uranium from high grade pitchblende ores from the Belgian Congo).
- Treatment of metal oxides in Silo 3 by use of stabilization technology. Off-site disposition of treated wastes at the Nevada Test Site.

AQUIFER RESTORATION AND WASTEWATER PROJECT



MAJOR WORK SCOPE:

- Full restoration of impacted portions of the Great Miami Aquifer.
- Treatment of remediation wastewater, stormwater, and extracted groundwater at Advanced Wastewater Treatment Facility. Projected to exceed one billion gallons of contaminated water per year.
- Implementation of a comprehensive environmental monitoring program to assess impacts associated with site cleanup, the community, or the environment.



CLEANUP RESULTS:

Project Accomplishments

WASTE PITS REMEDIAL ACTION PROJECT

RECENT ACCOMPLISHMENTS:

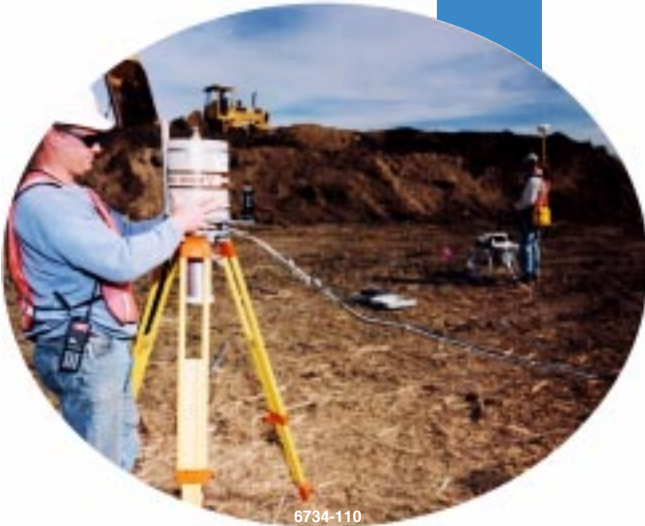
- Completed construction upgrades on:
 - Okeana Trestle
 - Paddy's Run Trestle
- Awarded Contracts for:
 - Cleanup of Waste Pits
 - Shandon Yard improvements

WORK IN PROGRESS:

- Mobilizing waste pits subcontractor for design implementation.
- Awarding contract for rail and access road lighting.



SOIL CHARACTERIZATION AND EXCAVATION PROJECT



RECENT ACCOMPLISHMENT:

- Submitted Remedial Design Package to regulators for excavation of Southern Waste Units and area south of On-Site Disposal Facility.

WORK IN PROGRESS:

- Fifty percent complete with site preparation field activities in the Southern Waste Units.
- Ninety percent complete with field implementation of Paddy's Run Embankment Stabilization activities.
- Beginning sampling/data collection activities in the soil west of Paddy's Run to determine if excavation is required to meet cleanup levels.



ON-SITE DISPOSAL FACILITY



RECENT ACCOMPLISHMENTS:

- Completed installation, testing, and successful start-up of the Leachate Conveyance System.
- Completed construction of the newly relocated North Entrance Road and the Disposal Facility Haul Road.
- Placed one foot of impacted material in Cell 1 to serve as seasonal cover for liner system.



WORK IN PROGRESS:

- Completing final closeout items on Cell 1.
- Performing routine maintenance on Leachate Conveyance System as needed.



FACILITIES CLOSURE AND DEMOLITION PROJECT

RECENT ACCOMPLISHMENTS:

- Removed holdup material in selected areas of Plant 2/3, Plant 8, and Building 69.
- Boiler Plant/Water Plant – continued asbestos removal activities and demolition of selected areas.
- Thorium/Plant 9 Complex – completed asbestos abatement and demolition of selected areas in Building 32, finished preparation activities in Plant 9.

WORK IN PROGRESS:

- Continuing to remove holdup material from former production buildings.
- Preparing implementation plans for Maintenance/Tank Farm Complex and Sewage Treatment Plant Complex.



S ILOS PROJECT



RECENT ACCOMPLISHMENTS:

- Submitted *Silo 3 Explanation of Significant Differences* document to regulators. Held public hearings in Ohio and Nevada to gain stakeholder input on document.
- Issued *Silo 3 Draft Request for Proposal* to gain vendor/regulator/stakeholder input.



WORK IN PROGRESS:

- Preparing *Silos 1 & 2 Request for Proposal for Multi-Tech Proof-of-Principle Testing*.

AQUIFER RESTORATION AND WASTEWATER PROJECT



RECENT ACCOMPLISHMENTS:

- Designed, constructed and brought into operation an 1100 gallon-per-minute capacity ion exchange Advanced Wastewater Treatment Facility.
- Reduced discharges of uranium to the Great Miami River by more than 75 percent.
- Implemented integrated environmental monitoring program.

WORK IN PROGRESS:

- Continuing construction activities on:
 - Advanced Wastewater Treatment Resin Regeneration System
 - Advanced Wastewater Treatment Facility Expansion
 - South Plume Optimization
 - Extraction Systems
 - Injection Demonstration Project



WASTE MANAGEMENT PROJECT



WORK IN PROGRESS:

- Thorium Legacy Waste Stabilization Project - submitting *Final Technology Specific Workplan* to regulators.
- Continuing readiness activities for start-up of T-Hopper Repackaging System Project.
- Continuing negotiations for disposition of nuclear materials.





Other Cleanup Results

PLANT 1 STORAGE PAD



In 1995, DOE and Fluor Daniel Fernald completed a three-year project to upgrade and expand the Plant 1 storage pad used for storage of drummed low-level waste. This eight-acre pad was used to store thousands of deteriorated drums. Fernald embarked on a program to over-pack these weathered drums into new containers and move the drummed material from outside storage into former production buildings or temporary fabric structures. The pad has been sealed and expanded to prevent contamination from entering the underlying aquifer.



S CRAP METAL PILE



In 1993, DOE and Fluor Daniel Fernald began a project to transfer an outdoor stockpile of scrap metal off site for processing, decontamination, and recycling or other productive use. Upon completion of the project in 1994, approximately 2200 tons of scrap metal had been safely removed from the site. The scrap metal pile has been completely cleaned up and is now being used as a staging area for packaged waste containers awaiting shipment.



P LANT 1 ORE SILOS PROJECT



The Plant 1 Ore Silos - 14 large concrete and tile silos that once held production residues - were cleaned out, dismantled, size-reduced, packaged and shipped to the Nevada Test Site in 1995. The silos had leaked residues onto an elevated support structure that was determined to be structurally unstable in high winds. The work was safely completed as a CERCLA removal action.



THORIUM NITRATE STABILIZATION



DOE and Fluor Daniel Fernald removed the last of Fernald's acidic wastes in November 1995, when almost 6,000 gallons of thorium nitrate were safely treated and solidified at the site. All hydrofluoric acid, nitric acid, uranyl nitrate hexahydrate and thorium nitrate - totaling 243,000 gallons of liquid contaminated acidic waste materials - have been safely processed at Fernald since mid-1995.

MIXED WASTE TREATMENT



In February 1996, DOE and Fluor Daniel Fernald completed the Mixed Waste Stabilization Project. Fernald is the first site within the DOE complex to implement a site treatment plan in compliance with the Federal Facilities Compliance Act by using a mobile treatment unit to successfully treat more than 2,000 drums of mixed waste. This project was completed ahead of schedule and provides a model for future mixed waste treatments on site and across the DOE complex.

DEMOLITION OF FORMER PRODUCTION BUILDINGS



Plant 7
September '94



Plant 4
August '96



Plant 1
February '97

DOE and Fluor Daniel Fernald have successfully imploded three of the largest production facilities at Fernald. Linear-shaped explosive charges were used to drop the steel structures to the ground after the buildings were emptied, cleaned out and stripped. These implosions mark first-time successes within the DOE Environmental Management Program, enhancing worker safety and saving a significant amount of time and money compared to traditional dismantling methods.

NUCLEAR MATERIALS DISPOSITION



DOE and Fluor Daniel Fernald have successfully removed more than half of Fernald's total 32 million net pound inventory of uranium metal products. This material was either transferred to other DOE sites for their use, or sold to commercial vendors for non-military use. Contracts are being negotiated for the commercial sale of the bulk of the remaining nuclear materials inventory. Removal of nuclear materials is critical to the accelerated decontamination and dismantling of buildings within the former production area at the site.

PUBLIC WATER SUPPLY



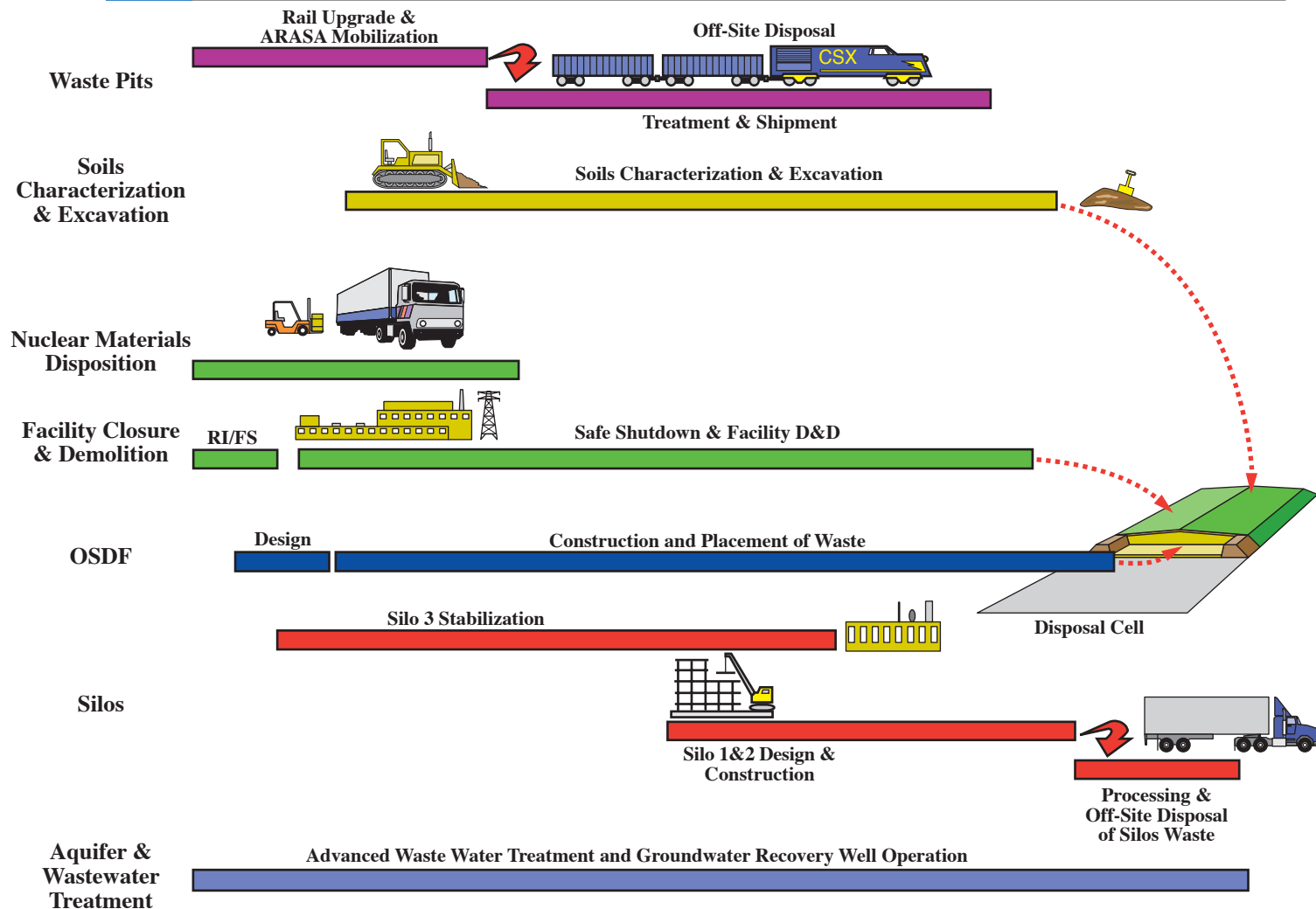
The Public Water Supply Project was completed in March 1997. Approximately 130 local residences are receiving free service connections to the system. The project was coordinated by DOE and Fluor Daniel Fernald in conjunction with the Hamilton County Department of Public Works and Cincinnati Water Works. The Public Water Supply Project eliminates bottled water for several residents whose wells were contaminated by the south groundwater plume. In addition, fire protection of local neighbors is enhanced.



FERNALD ACCELERATED CLEANUP PLAN

Master Schedule

1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
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FERNALD

Environmental Management Project



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You may also visit Fernald's Web site (<http://www.fernald.gov>).